Vergence:

* **Lentilles:** $\mathcal{C} = \frac{1}{\overline{OF'}}$

* **Deux lentilles accolées:** $\mathcal{C} = \mathcal{C}_1 + \mathcal{C}_2$

* **Deux lentilles non-accolées:** $\mathcal{C} = \mathcal{C}_1 + \mathcal{C}_2 - \overline{O_1O_2}\,\mathcal{C}_1\mathcal{C}_2$

* **Deux lentilles non-accolées a un milieu d'indice N:**

$$\mathcal{C} = \mathcal{C}_1 + \mathcal{C}_2 - \frac{\overline{O_1O_2}}{N}\,\mathcal{C}_1\mathcal{C}_2$$

Puissance:

* **instrument optique:** $P = \frac{\alpha'}{\overline{AB}} = \frac{\gamma}{\overline{A'S}}$

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* **Loupe:** $P_1 = \frac{1}{\overline{OF'}} = C = \frac{\alpha'}{AB}$

Diamètre apparent:

* **d'un objet observé directement:** $\alpha = \frac{\overline{AB}}{\overline{AS}} = \frac{\overline{AB}}{dm}$

* **d'un objet observé à travers un instrument optique:**

$$\alpha' = \frac{\overline{A'B'}}{\overline{A'S}}$$

Latitude de mise au point:

$$\mathcal{L} = \overline{A_R A_P}$$

Amplitude d'accomodation:

$$A = \frac{1}{\overline{OR}} - \frac{1}{\overline{OP}} = \frac{1}{dm} - \frac{1}{Dm}$$ en $(\delta = m^{-1})$

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Relations de conjugaison:

* Miroir plan $\Longrightarrow$ $\boxed{\overline{SA'} + \overline{SA} = 0}$
* Dioptre plan: $\Longrightarrow$ $\boxed{n_1 \overline{SA'} = n_2 \overline{SA}}$
* Dioptre sphérique: $\Longrightarrow$ $\boxed{\frac{n_2}{\overline{SA'}} - \frac{n_1}{\overline{SA}} = \frac{n_2 - n_1}{\overline{SC}}}$
* Miroir sphérique: $\Longrightarrow$ $\boxed{\frac{1}{\overline{SA'}} + \frac{1}{\overline{SA}} = \frac{2}{\overline{SC}}}$
* Lentilles: $\Longrightarrow$ $\boxed{\frac{1}{\overline{OA'}} - \frac{1}{\overline{OA}} = \frac{1}{\overline{OF'}}}$

Grandissement:

* Miroir sphérique: $\Longrightarrow$ $\boxed{\gamma = \frac{\overline{A'B'}}{\overline{AB}} = -\frac{\overline{SA'}}{\overline{SA}}}$
* Dioptre sphérique: $\Longrightarrow$ $\boxed{\gamma = \frac{\overline{A'B'}}{\overline{AB}} = \frac{n_1}{n_2}\frac{\overline{SA'}}{\overline{SA}}}$
* Lentilles: $\Longrightarrow$ $\boxed{\gamma = \frac{\overline{A'B'}}{\overline{AB}} = \frac{\overline{OA'}}{\overline{OA}}}$

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* Instrument optique: $\Longrightarrow$ $\boxed{G = \frac{\alpha'}{\alpha}}$
* Loupe: $\boxed{G = \frac{\alpha'}{\alpha} = \frac{\alpha'}{\overline{AB}}\cdot\frac{\overline{AB}}{\alpha} = \frac{1}{\overline{OF'}}\cdot\frac{\overline{AB}}{\alpha} = P_1\frac{\overline{AB}}{\alpha}}$
* Microscope: $\boxed{G = \frac{\alpha'}{\alpha} = \frac{\alpha' d_m}{\overline{AB}} = P d_m}$

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